

City of Chattanooga
AUTOMATED
TRAFFIC ENFORCEMENT
PROGRAM
Legislative Tour



January 4, 2010



RESOLUTION NO. 26096

A RESOLUTION EXPRESSING THE CITY COUNCIL'S
SUPPORT OF EFFORTS TO ALLOW PHOTO
ENFORCEMENT PROGRAMS TO BE USED TO IMPROVE
TRAFFIC SAFETY ON THE STATE'S STREETS AND
HIGHWAYS.

WHEREAS, the City of Chattanooga has established a photo enforcement program which has proven to be effective in improving traffic safety on the streets of Chattanooga by reducing speeding, the running of red lights, and positively modifying driver behavior, and

WHEREAS, the residents of Chattanooga have recognized that the program has been successful in fulfilling the City's goal of improving traffic safety and has supported the City's efforts to utilize this new technology, and

WHEREAS, the City of Chattanooga has used the revenue generated by this program to fund traffic safety programs, including the re-establishment of a public-supported driver's education program for school children, and

WHEREAS, the City of Chattanooga has committed to use this valuable program to support other needed engineering, education, and enforcement traffic safety programs in the future.

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, TENNESSEE, that it supports efforts to allow photo enforcement programs to be used to improve traffic safety on the state's streets and highways.

ADOPTED October 13, 2009

JV/add

Chattanooga's Automated Traffic Enforcement Program

Legislative Field Tour

January 4, 2010
1:00 to 3:00 p.m.
Chattanooga City Hall

John W. Van Winkle, P.E.
City Traffic Engineer



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Welcome To Chattanooga's Automated Enforcement Program



Three Primary Considerations for Chattanooga's Automated Photo Enforcement Program

- What was the motivation for developing the program?
- What are the strategies used to focus photo enforcement efforts to improve traffic safety?
- How will the revenue generated by the program be used?



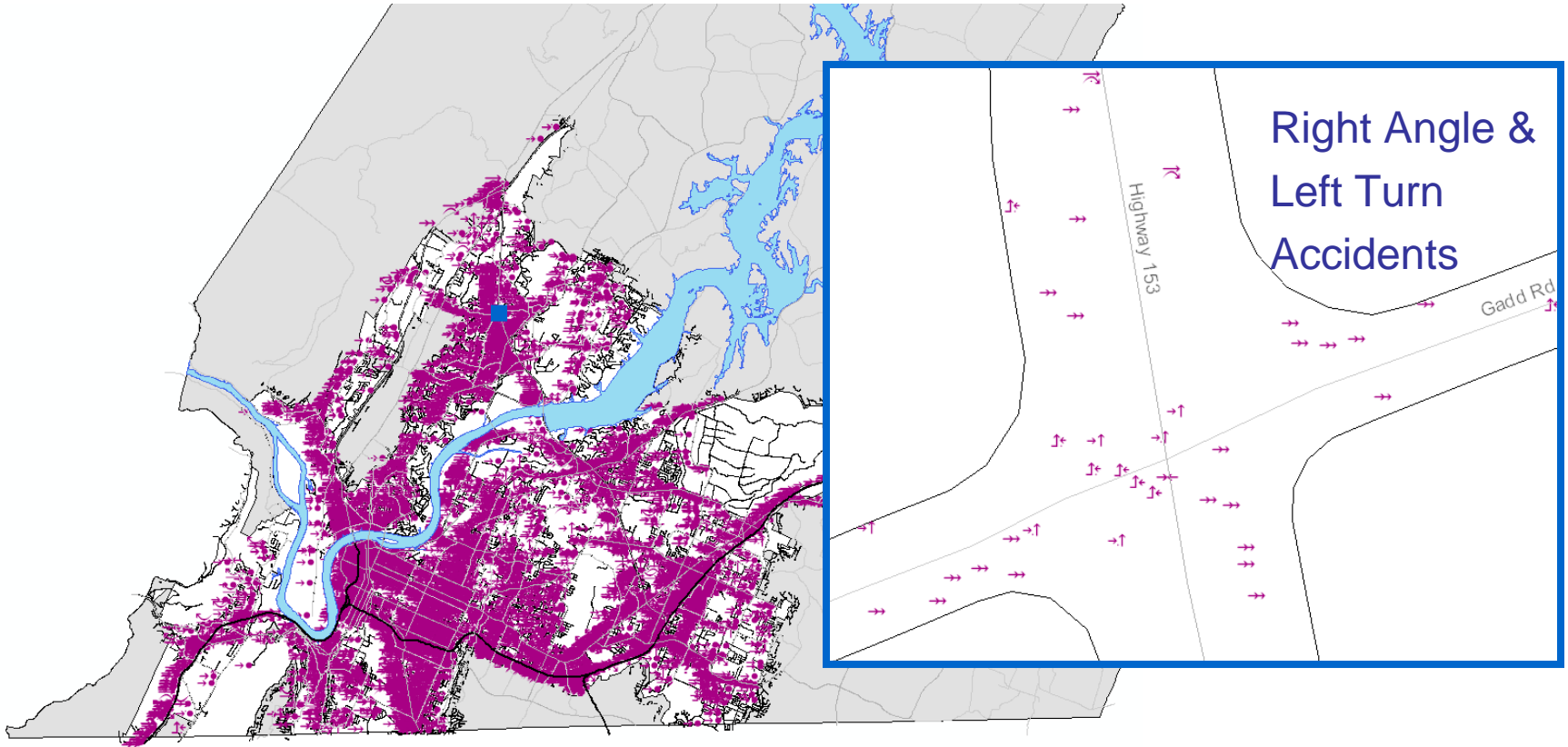
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How to Reduce Accidents

Chattanooga Averages 10,000 traffic accidents a year



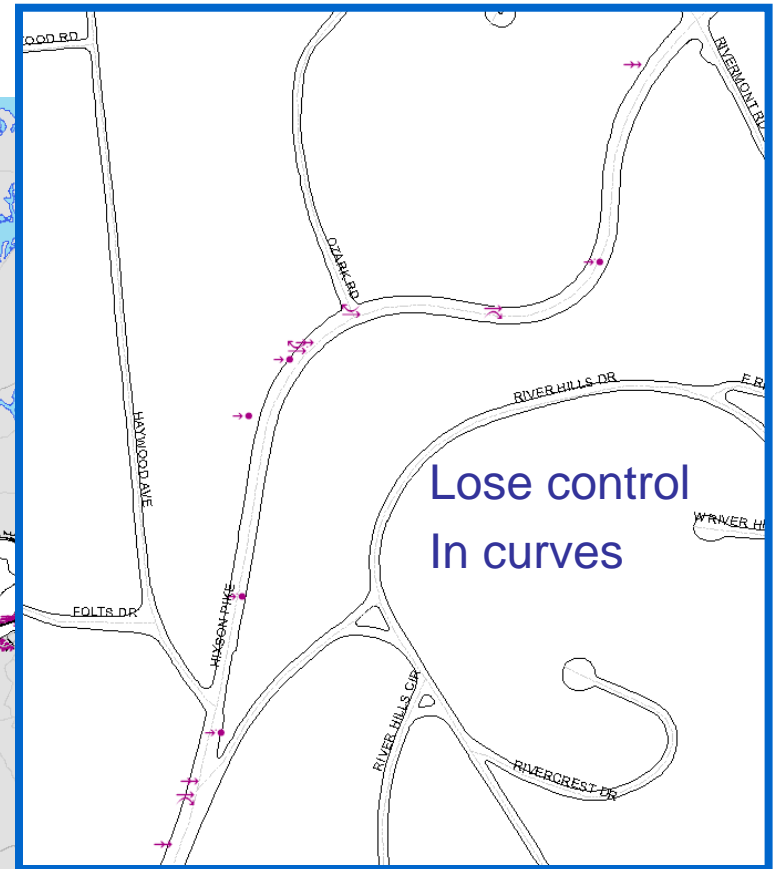
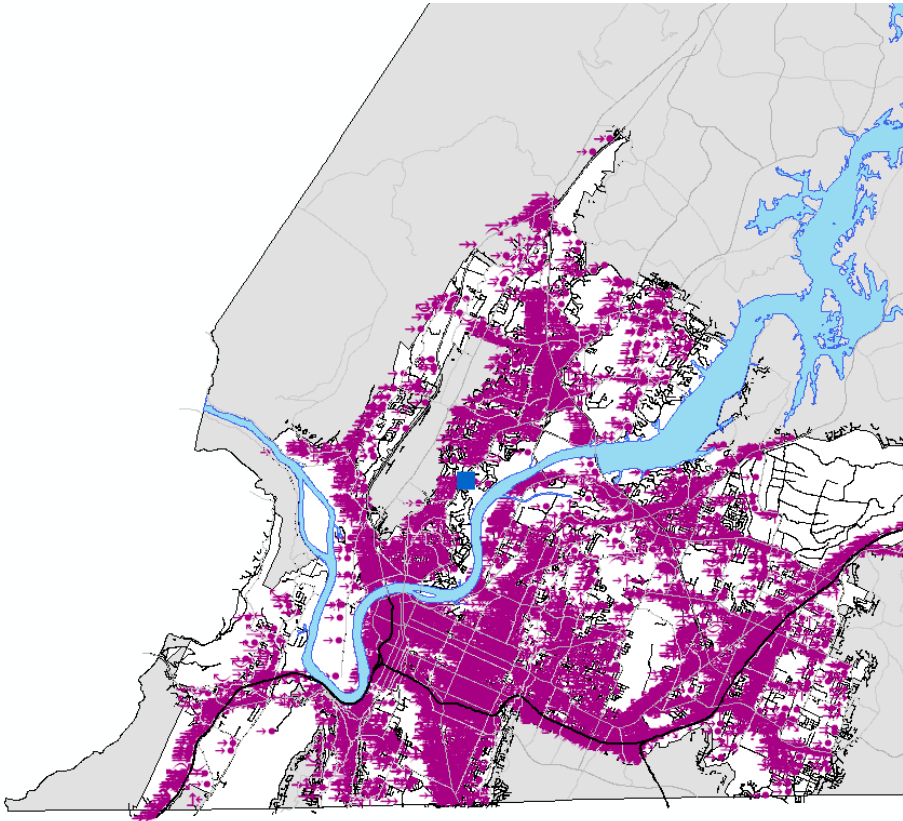
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How to Reduce Accidents

10,000 traffic accidents a year



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Chattanooga's Automated Photo Enforcement Demonstration

Bailey/ML King at Central

Total Number of Accidents
Before & After Cameras

Before Installation (1998):
45 Accidents

After Installation (2000):
10 Accidents
(78% Reduction)

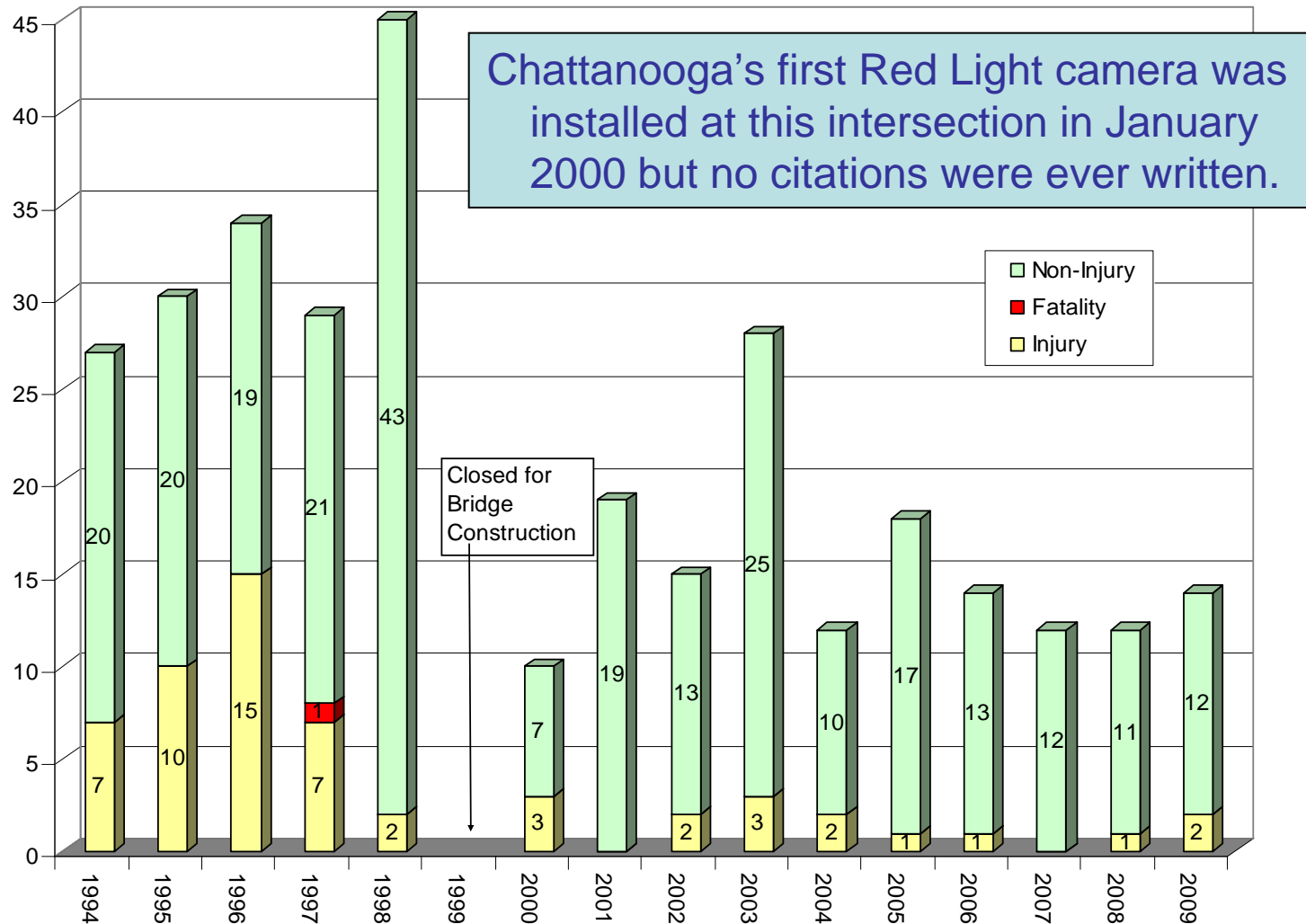


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Bailey Avenue & Central Avenue Crashes



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Speed Photo Enforcement

- Speed camera system designed for Hixson Pike with four separate installations: two camera systems tracking northbound traffic and two tracking southbound traffic.
- System activated June 15, 2007.
- Warning tickets issued for the first month.
- Regular enforcement began on July 16, 2007.



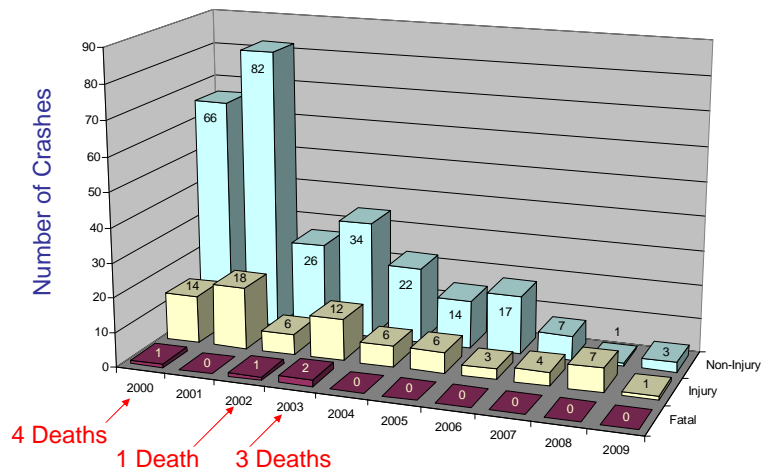
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Hixson Pike Accident History

Cameras Installed June 2007

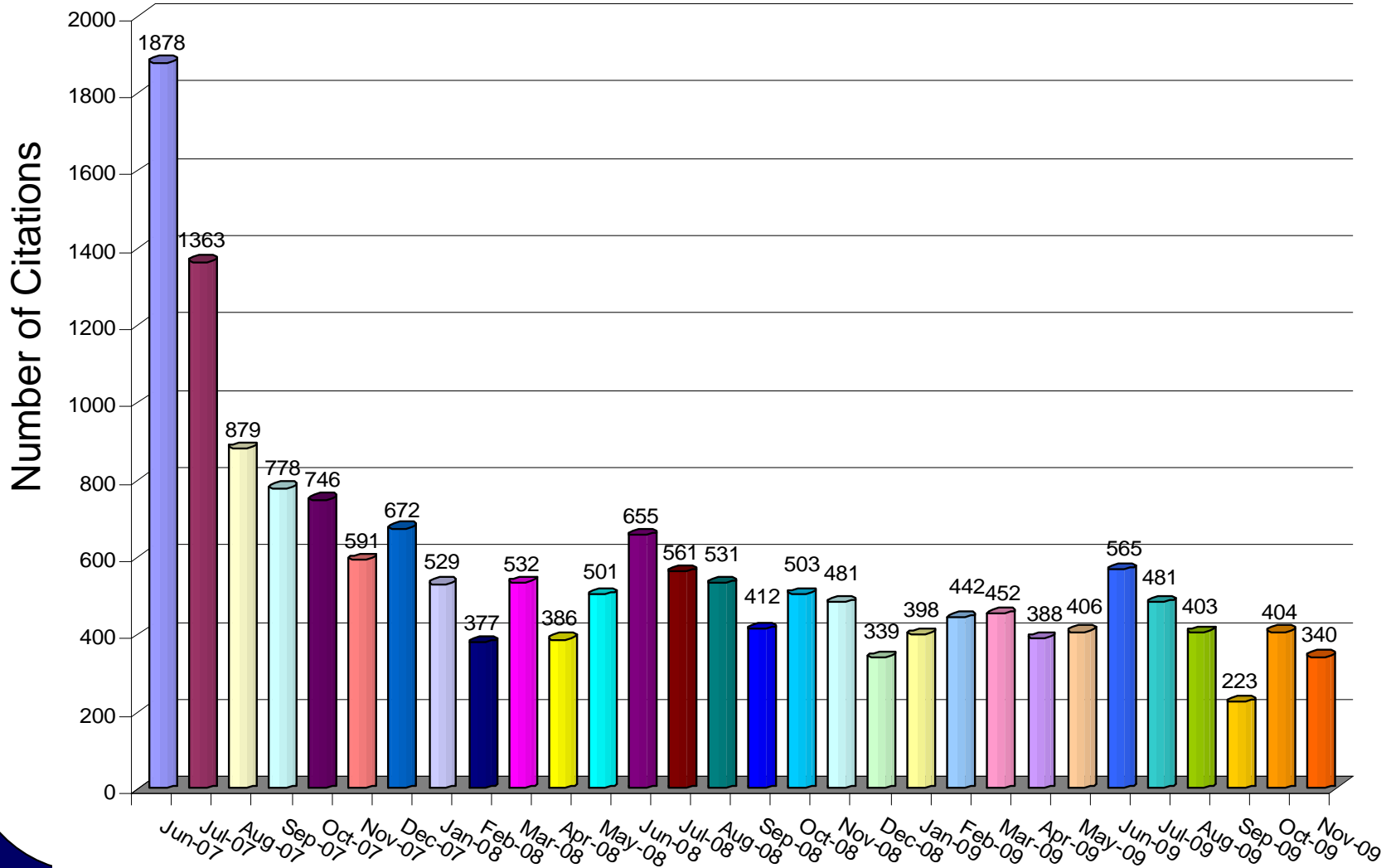


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Hixson Pike - Citations Issued



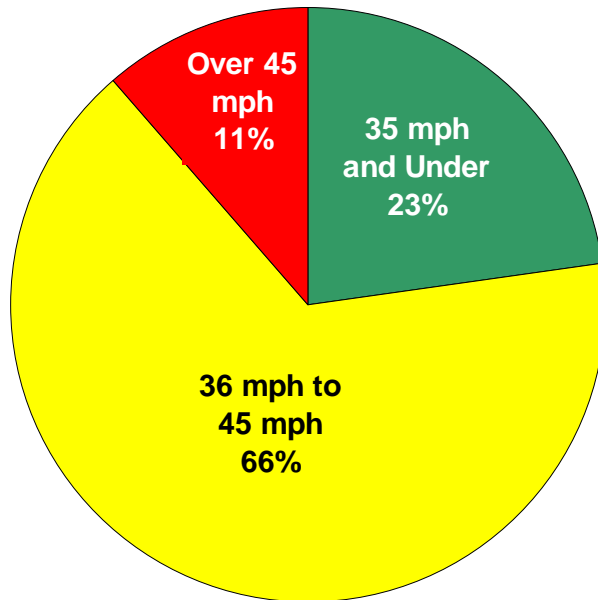
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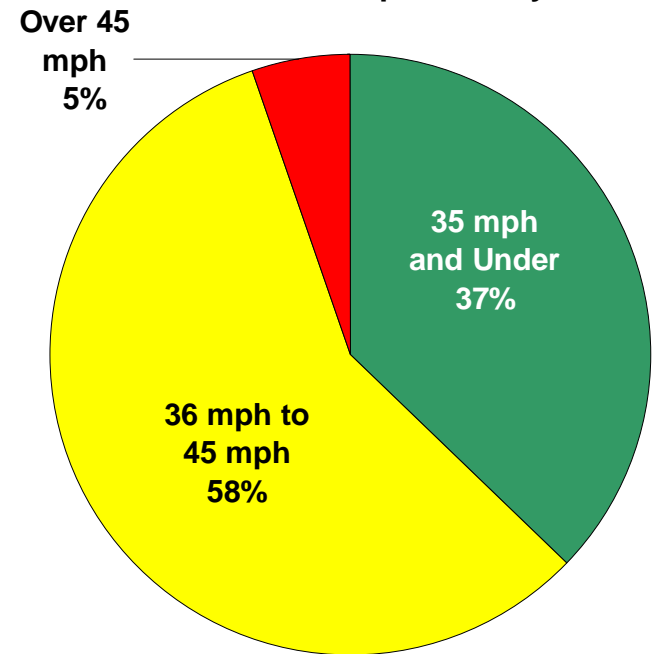





Barton Avenue Speed Study

March 2009 Speed Study



October 2009 Speed Study



-  More than 10 mph over 35 mph speed limit
-  Within 10 mph over 35 mph speed limit
-  At or below 35 mph speed limit

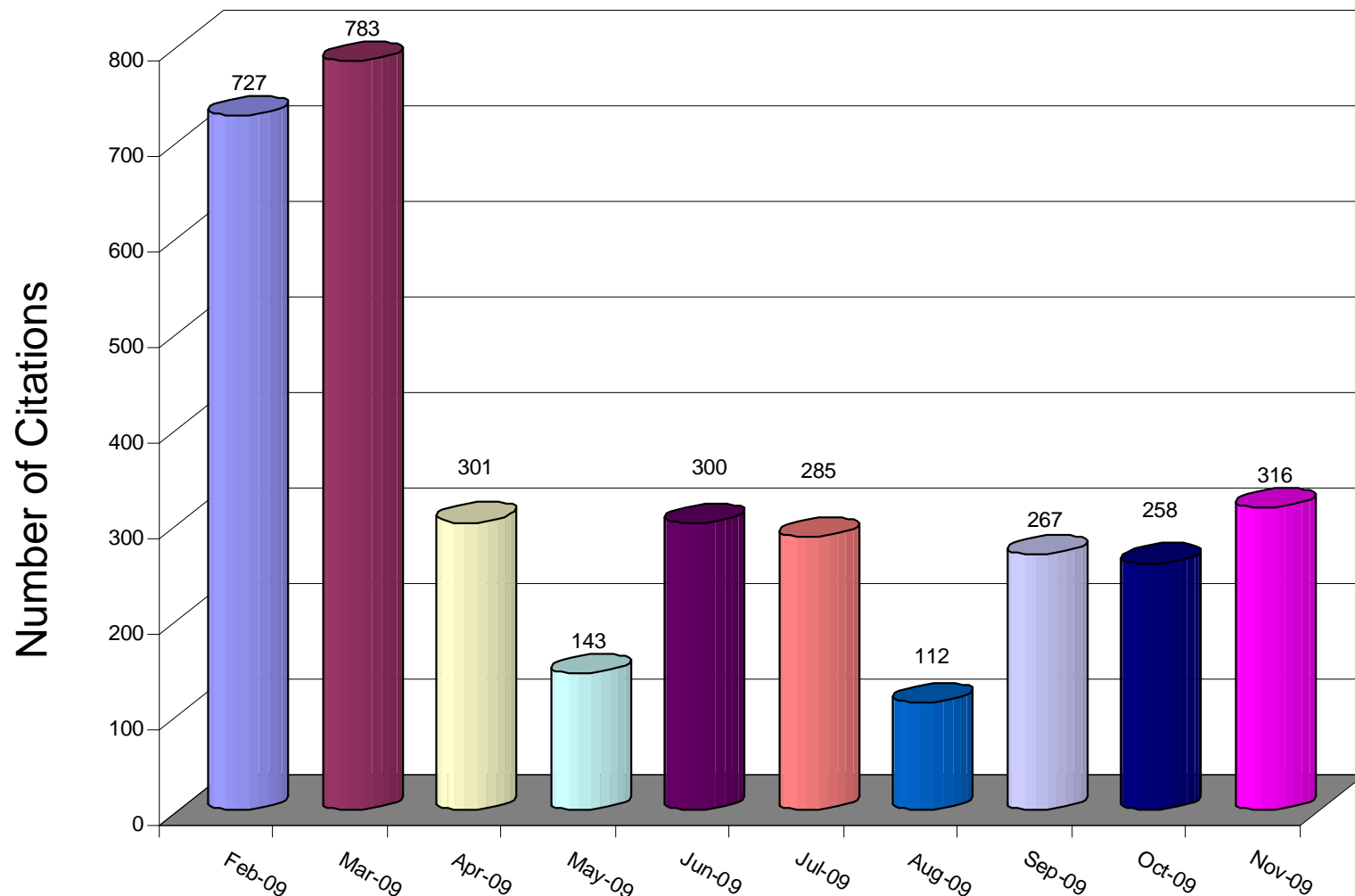


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Barton Avenue Citations Issued

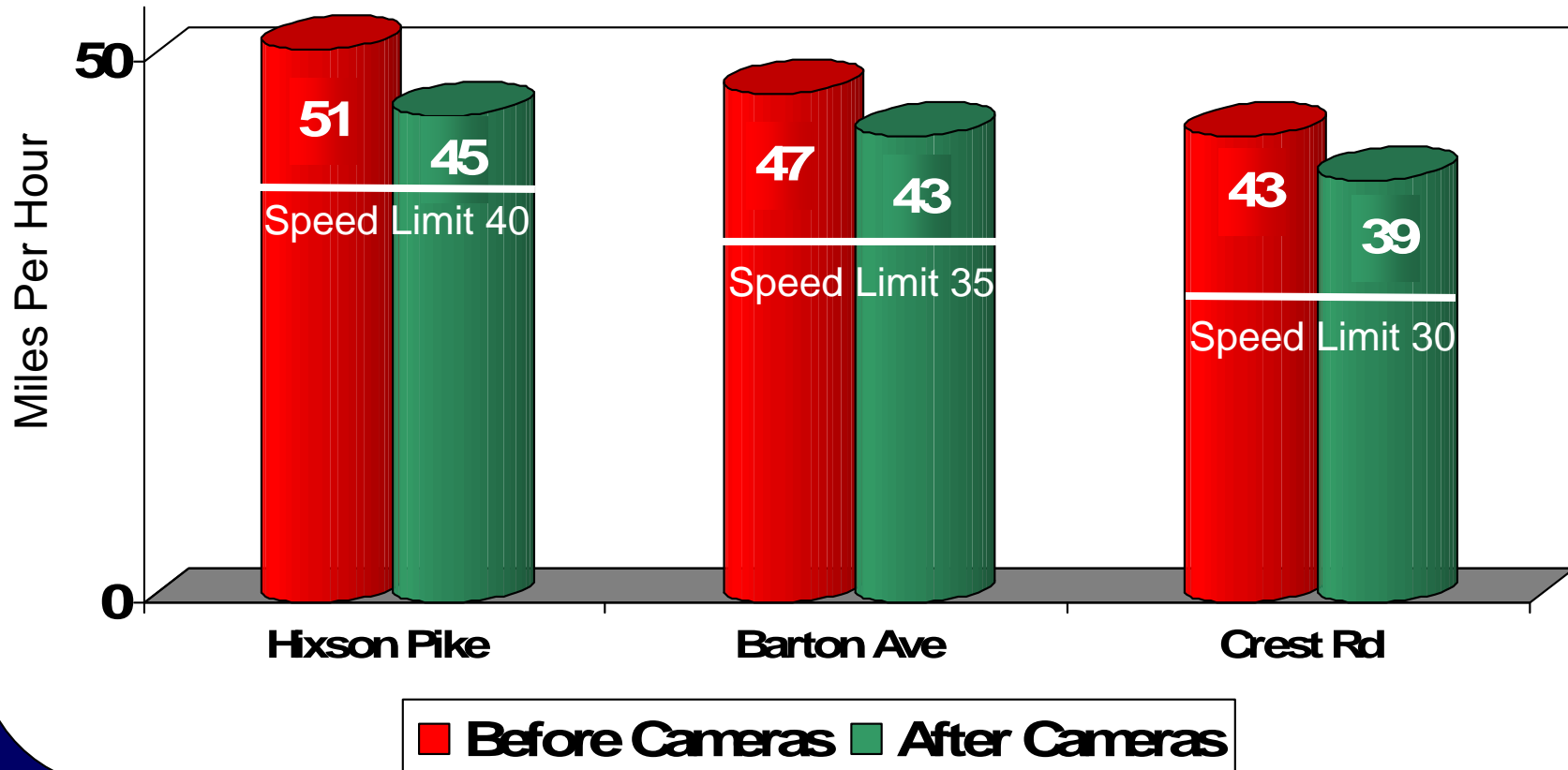


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85% Speeds Before & After Photo Enforcement

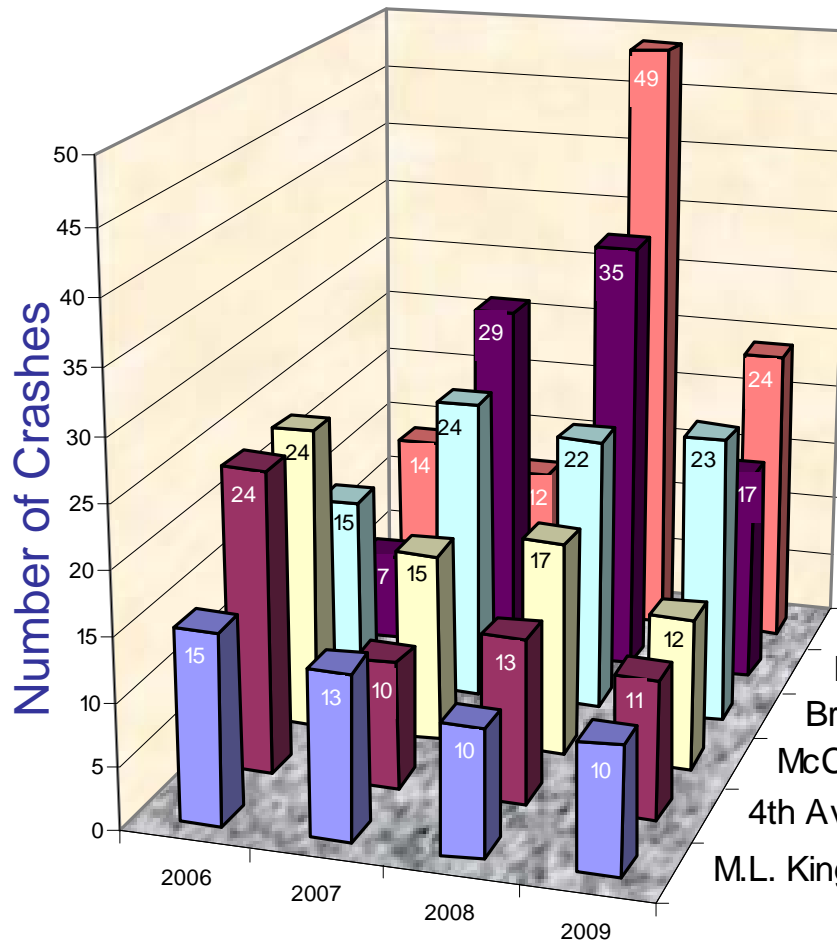


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Photo Enforced Intersection Total Crashes for All Directions



We expect a continued decline in accidents at signals with Red Light Cameras

Hwy 153 & Hamill Rd -Camera installed Jan, 2008
Hwy 153 & Gadd Rd -Camera installed Dec, 2007
Brainerd Rd & Moore Rd -Camera installed Dec, 2007
McCallie Ave & Holtzclaw Ave -Camera installed May, 2008
4th Ave, S Kelley St & E 23rd St -Camera installed Jan, 2008
M.L. King Blvd & Pine St -Camera installed Dec, 2007



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2008 Highest Rated Accident Intersections

LOCATION	CRASH RATE	NO. OF ACCIDENTS
1. HIXSON PIKE AND HWY 153 NORTH BOUND RAMP	5.71	47
2. BRAINERD RD AND GERMANTOWN RD	2.95	35
3. GUNBARREL RD, HAMILTON PLACE AND HAMILTON VILLAGE	2.52	31
3. HAMILL RD AND HWY153	2.44	49
4. GADD RD AND HWY 153	2.12	38
5. CENTRAL AVE AND MCCALLIE AVE	1.99	18
6. GUNBARREL RD AND SHALLOWFORD RD	1.98	32
7. EAST BRAINERD RD, HICKORY VALLEY RD AND I 75 SOUTH RAMP	1.98	37
8. MCCALLIE AVE AND WILLOW ST	1.95	15
9. EAST BRAINERD RD AND GUNBARREL RD	1.81	43
10. CHESTNUT ST AND 4TH ST	1.80	17
11. BRAINERD RD AND GREENWAY VIEW DR	1.71	24
11. 4TH AVE/KELLY ST AND E 23RD ST	1.71	16
13. HOLTZCLAW AVE AND MCCALLIE AVE	1.70	17
14. COMMONS BLVD AND GUNBARREL RD	1.56	19
15. LEE HWY AND LITTLE DEBBIE PARKWAY	1.55	16
16. BAILEY AVE AND WILLOW ST	1.54	15
17. EAST BRAINERD RD, CONCORD RD AND PHILS DR	1.52	29
18. BRAINERD RD, MOORE RD, AND CLUB DR	1.50	24

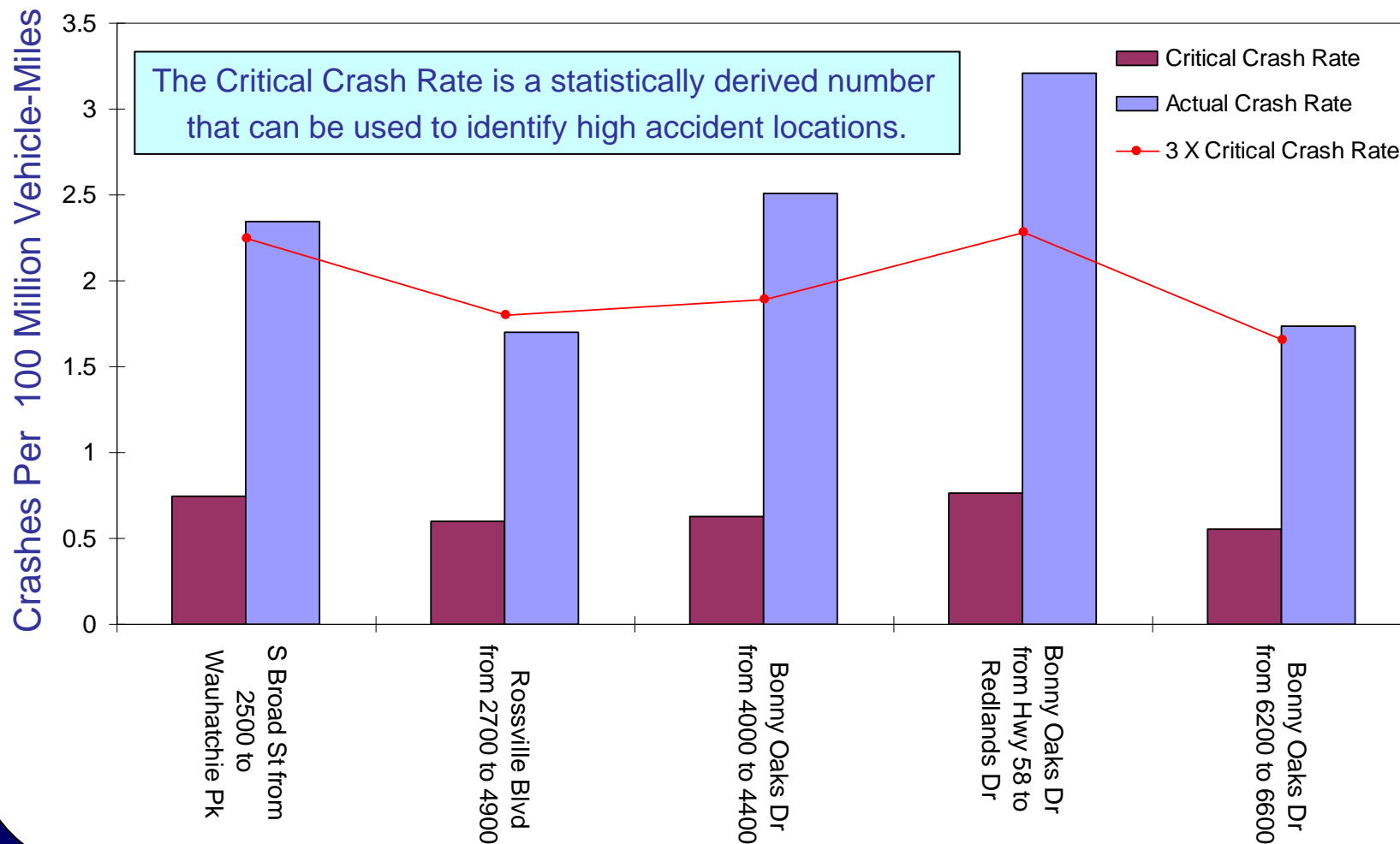


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Speed Van Location Study

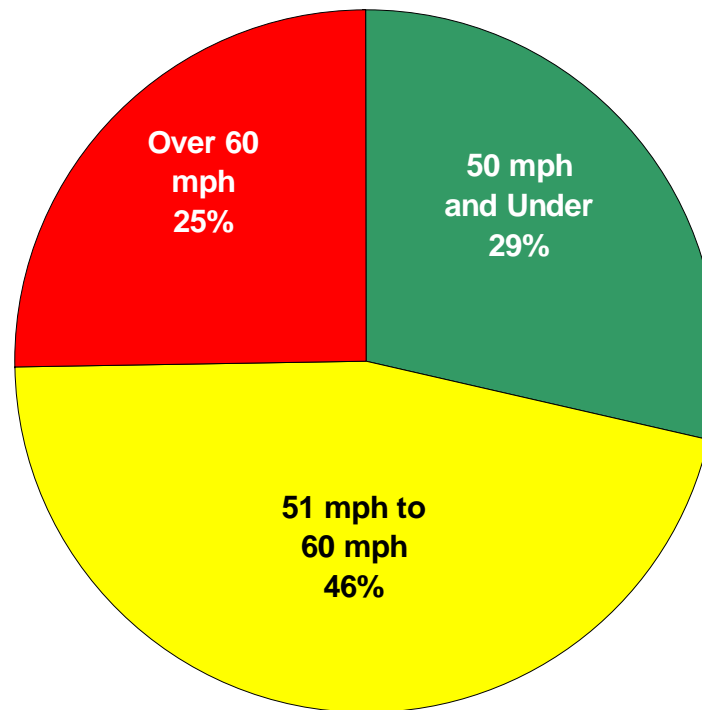


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Amnicola Highway Speeds



Working to
reduce speeds
using Mobile
Speed Van

-  More than 10 mph over 50 mph speed limit
-  Within 10 mph over 50 mph speed limit
-  At or below 50 mph speed limit

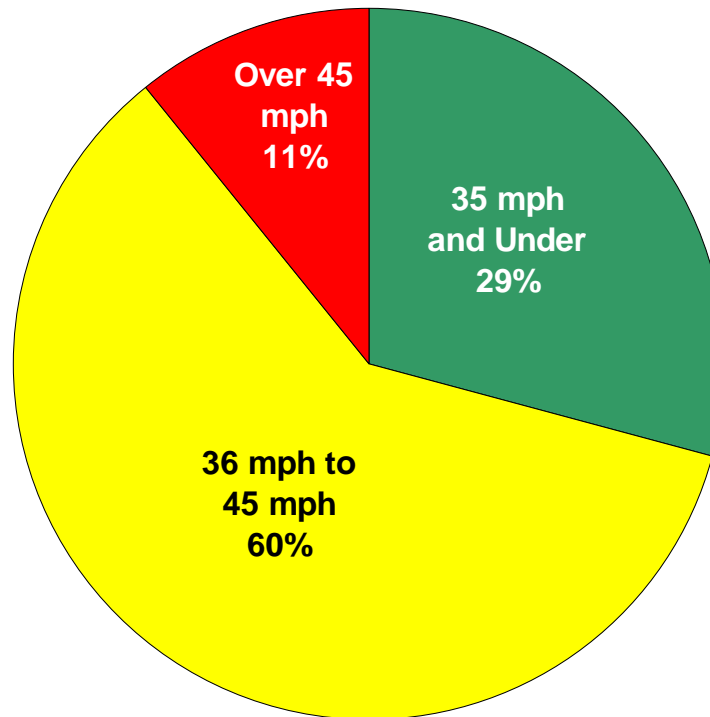


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St. Elmo Avenue Speeds



Construction
underway for
fixed speed
camera

-  More than 10 mph over 35 mph speed limit
-  Within 10 mph over 35 mph speed limit
-  At or below 35 mph speed limit



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Essential Elements of Effective Photo Enforcement Programs

- Traffic engineering standards should be rigidly followed in order to:
 - Set proper traffic signal clearance timings using federal standards.
 - Establish speed limits which conform to the 85% speeds.
- Enforcement locations are established by using accident records, citizen input, and speed studies verifying speeding problems.



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Essential Elements of Effective Photo Enforcement Programs

- Core purpose of our program is to modify bad driver behavior through stricter enforcement.
- Program is NOT designed simply to generate revenue to balance the budget; rather, revenues from the program should be used to fund traffic safety programs.



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Chattanooga's Automated Photo Enforcement Ordinance

Sec. 24-273 Automated Enforcement

- Revenues generated shall be applied to the costs of administering the program and costs associated with public safety, traffic and safety education, engineering, and enforcement programs.
- Signs to indicate the use of traffic control photographic systems shall be clearly posted.

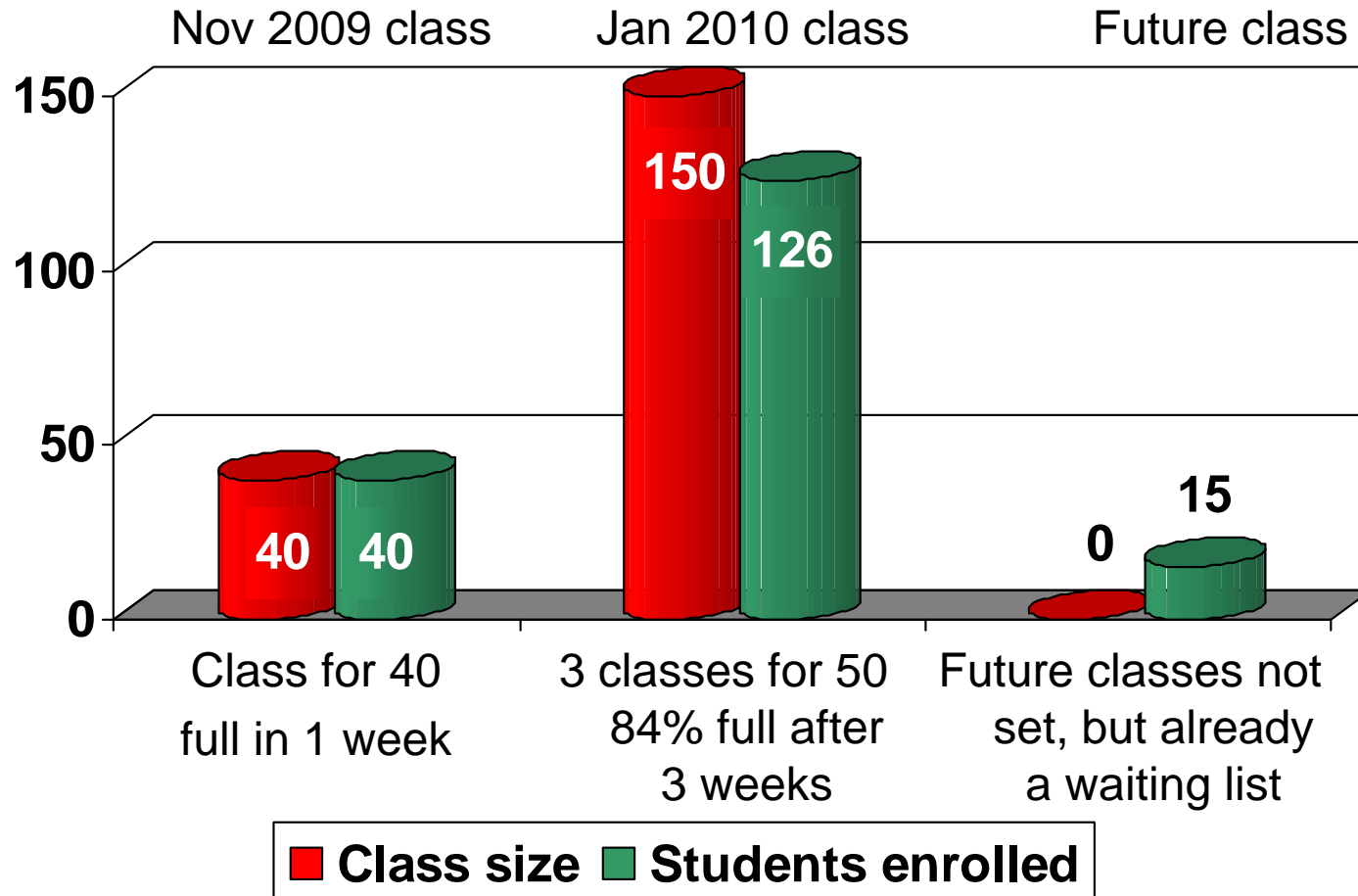


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Driver Education Classes



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Chattanooga's Photo Enforcement Program - Making Our Streets Safer





Why Utilize Automated Enforcement?

- **Driving is learned behavior.**
- **A patrol officer can issue an average of 32 citations during an 8 hour shift without any calls for service or interruptions.**
- **It's our job to respond to "interruptions".**
- **With the other functions of patrol work taken into account, a patrol officer can issue an average of 32 citations in a month.**



Why Utilize Automated Enforcement?

- **A fixed speed enforcement location can issue 30-40 citations per day per lane of traffic.**
- **To have an effect of driver behavior, law enforcement must have as much of an impact as possible.**
- **Automated enforcement is an additional resource police officers have to make this impact.**

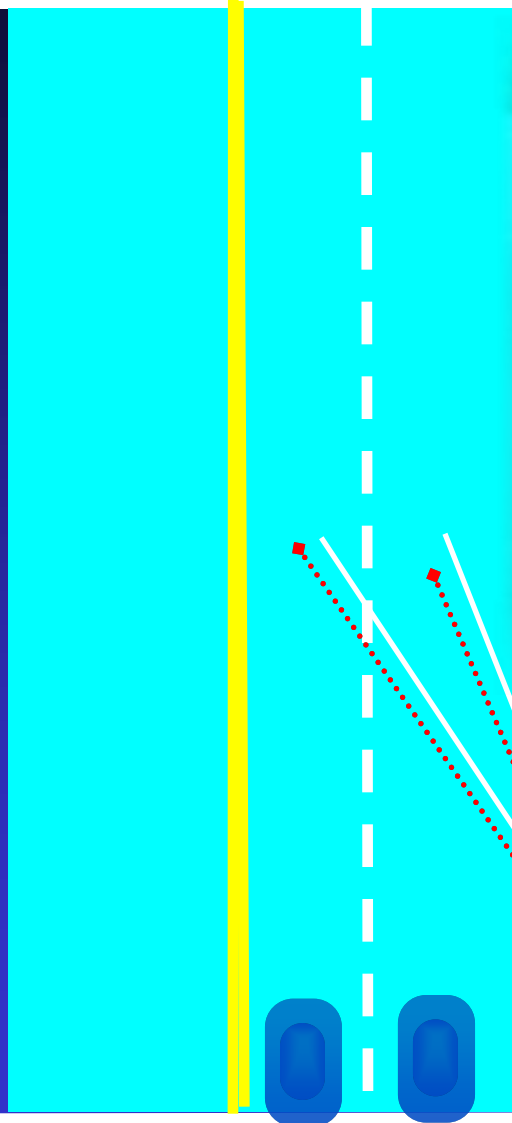


How Does the System Work?

Photo Speed Cameras

Fixed & Mobile Speed

- Speed threshold set for specific approach
- Vehicle travels away from speed unit
- Speed detection of all passing vehicles
- Photo captured of vehicle and tag if over threshold
- Encrypted image stored until retrieved from site





How it Works

- The Red Light System is connected to Traffic Control Unit .
- When “Yellow” Light Phase is Detected, the Automated Red Light System is Activated.
- When “Red” Light Phase is Detected, the monitoring of potential violators begins.
- The Red Light System measures vehicle speed as it is approaching the white balk (stop line) line.
- When the speed of a vehicle exceeds a predetermined value three images of the event are captured along with a video of the event.



How Does the System Work?

Photo Red Light



Traffic
Controller
Isolated
Connection

Laser System

Individual Laser Per Lane
Ensures Accurate Vehicle
Detection

Camera System

System Configuration
Ensures Accurate Vehicle
Captured

Controller Assembly:

Coordinates Lasers and
Cameras to capture violations





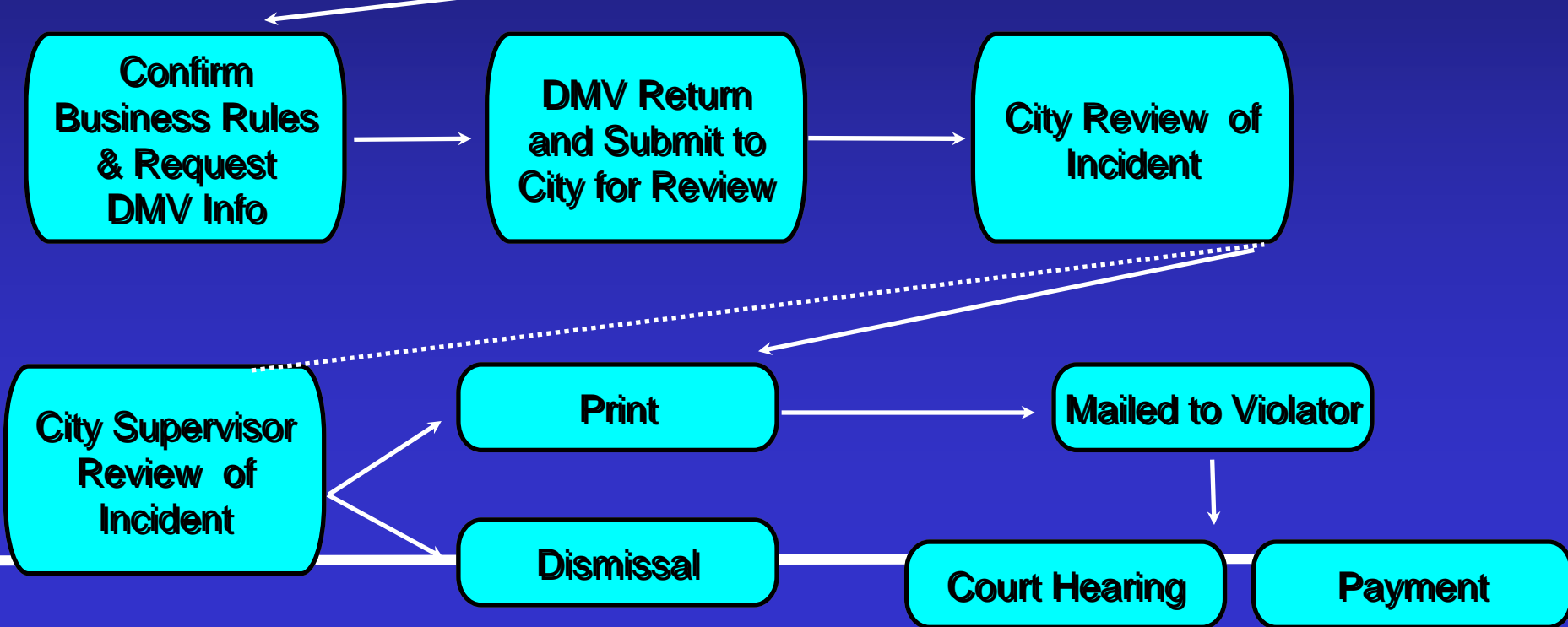
Evidence Captured at
roadway



Evidence Encrypted



Files FTP'd to Processing
Center





On Line Citation Review Demonstration



Vendor NLETS Access

- Information for vehicle registration is obtained through NLETS - National Law Enforcement Telecommunications System.
- Owned and operated by the states and includes federal, state, and local law enforcement and support services.
- Automated enforcement utilizes securely limited access via NLETS to motor vehicle information necessary for the enforcement of traffic-related violations.
- Other law enforcement partners include OnStar, InsureNet, and LoJack.



Technology and Maintenance Considerations

- **Hardware & Installation for Automated Enforcement Description**
 - 8 Photo Red Light
 - 8 Fixed Speed
 - 4 Speed Vans
- **Bucket truck, storage, spare parts- Chattanooga Market Software setup and testing data surveys total - Initial Outlay**
- **Recurring Costs - Annual estimates**
- **Technician – Supports 20 systems**
- **Spare parts - annual repairs**
- **Vehicle maintenance, license, insurance**
- **Citation Processing (Citation processing, print, mail, phone support)**
- **Speed Enforcement signage**



Emergency Vehicle Citations

- All possible violations for emergency vehicles are reviewed by a police supervisor using either photo or video for proper use of emergency equipment when violating traffic laws.
- If emergency responder is found to be answering a priority call for service the citation is rejected.
- If no call for service is found or documented, the citation is approved and forwarded through the driver's chain of command for payment or request for judicial dismissal.
- Reference police department schematic



Unexpected Benefits

- The videos and photos captured have proven invaluable in areas of law enforcement outside of photo enforcement.
- The Property Crimes Division has used video footage to solve a robbery at the Mapco located at Hamill Road and Highway 153.
- Arson investigators have also used video footage to aid in arson investigations.



Unexpected Benefits

**S-Curves fatality occurred
March 23, 2007.**

**Police had limited suspect
information of vehicles make,
model and color.**

**Two vehicles were drag racing
through the S-Curves during
the test phase.**

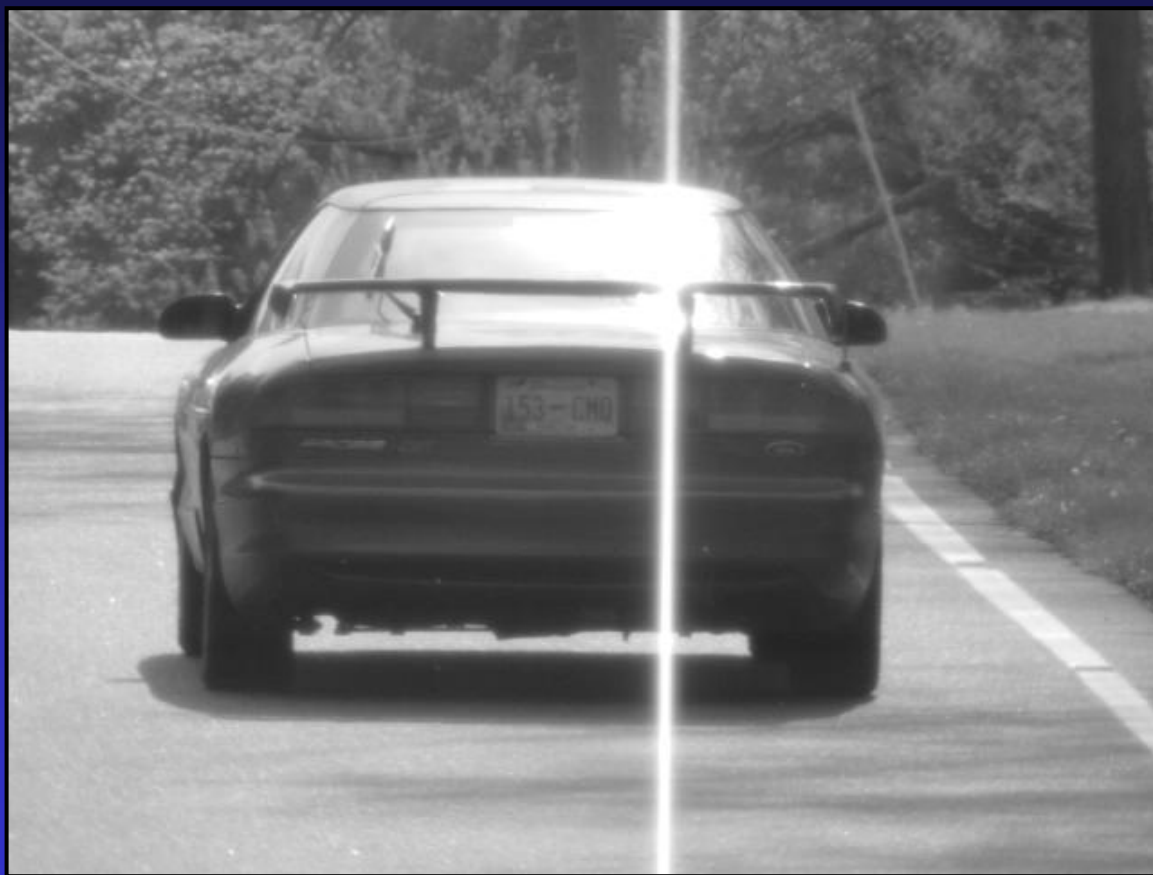
**Traffic Investigators were able
to obtain photos of both
vehicles and charge the driver
with vehicular homicide.**

**Suspect's vehicle was located
inside a paint shop.**





More importantly....





Video Evidence

- **Cameras offer evidence that can settle major crash and fatality investigations.**
- **Results in less follow-up and court time for officers and investigators.**
- **Camera evidence can aid in court dispositions.**
- **As the saying goes...**
 - “A picture is worth a 1,000 words”**



Video Evidence

2008/08/20 17:07:18





Video Evidence

2008/09/25 13:17:16





Video Evidence



